## CLAIMS

1. A stopper comprising a barrier layer which comprises a reactive hot melt polyurethane adhesive.

2. A stopper according to Claim 1 wherein the barrier layer has a permeability of less than about 200 $cm^3m^{-2}day^{-1}$.

3. A stopper according to Claim 1 wherein the barrier layer has a permeability of less than about 50 $cm^3\,m^{-2}day^{-1}$ .

4. A stopper according to Claim 1 wherein the barrier layer has a permeability of less than about 30 $cm^3m^{-2}day^{-1}$.

5. A stopper according to Claim 1 wherein the barrier layer has a permeability of 0 $cm^3m^{-2}day^{-1}$.

6. A stopper according to any one of Claims 1 to 5 wherein the barrier layer has a thickness of from about 0.05 to about 100 microns.

7. A stopper according to any one of Claims 1 to 5, wherein the barrier layer has a thickness of from about 0.075 to about 50 microns.

8. A stopper according to any one of Claims 1 to 5, wherein the barrier layer has a thickness of from about 0.1 to about 30 microns.

9. A stopper according to any one of Claims 1 to 8 wherein the polyurethane adhesive is an aliphatic polyurethane.

10. A stopper according to any one of Claims 1 to 9 wherein the barrier layer includes one or more additives.

11. A stopper according to Claim 10 wherein the or each additive is selected from metal oxides finely divided silicon, powdered PTFE and clays.

12. A stopper according to any one of Claims 1 to 11 wherein the stopper is cylindrical in shape and has two faces located at the ends of the cylinder.

13. A stopper according to any one of Claims 1 to 12 wherein the stopper is shaped to resemble a champagne cork and has a face located at the base of the stopper.

14. A stopper according to Claim 12 or 13 wherein the at least one face is rounded or bevelled.

15. A stopper according to Claim 12 or 14 wherein the barrier layer is located at either or both of the faces.

16. A stopper according to any one of Claims 12 to 14 wherein the barrier layer is located within the body of the stopper and substantially parallel to the or at least one of the faces of the stopper.

17. A stopper according to any one of Claims 1 to 16 wherein the barrier layer extends across the entire face or cross-section of the stopper such that a continuous barrier is provided.

18. A stopper according to any one of Claims 1 to 17 wherein the barrier layer extends across only a portion of the face or cross-section.

19. A stopper according to any one of Claims 1 to 18 wherein the barrier layer extends beyond the face or cross-section of the stopper to form a gasket.

20. A stopper according to any one of Claims 1 to 19 wherein the barrier layer is a composite layer comprising at least one hot melt polyurethane adhesive sub-layer and at least one sub-layer having lower oxygen permeability than the hot melt adhesive.

21. A stopper according to Claim 20 wherein a hot melt polyurethane adhesive sub-layer is located against the material of the stopper.

22. A stopper according to Claim 20 or 21 wherein the lower oxygen permeability material is a metal foil or a vacuum deposited metal.

23. A stopper according to Claim 20 or 22 wherein the lower oxygen permeability material is an ethylene vinyl alcohol copolymer.

24. A stopper according to any one of Claims 1 to 22 wherein the stopper is a stopper for a bottle.

25. A stopper according to Claim 24 wherein the bottle is a wine bottle.

26. A stopper according to Claim 24 or 25 wherein the stopper is made of cork or plastics material.

27. A stopper according to any one of Claims 1 to 26 wherein the barrier will additionally provide a barrier to microbiological contaminants.

28. A composite barrier layer for use with a stopper comprising at least one reactive hot melt polyurethane adhesive sub-layer and at least one sub-layer having lower oxygen permeability than the or each hot melt adhesive sub-layer.

29. A barrier layer according to Claim 28 wherein the lower oxygen permeability material is a metal foil or a vacuum deposited metal.

30. A barrier layer according to Claim 28 wherein the lower oxygen permeability material is an ethylene vinyl alcohol copolymer.

31. A barrier layer according to any one of Claims 28 to 30 having a permeability of less than about 200 $cm^3\ m^{-2}\ day^{-1}$.

32. A barrier layer according to any one of Claims 28 to 30 having a permeability of less than about 50 $cm^3$ $m^{-2}$ $day^{-1}$.

33. A barrier layer according to any one of Claims 28 to 32 having a permeability of less than about 30 $cm^3$ $m^{-2}$ $day^{-1}$.

34. A barrier layer according to any one of Claims 28 to 32 having a permeability of 0 $cm^3$ $m^{-2}$ $day^{-1}$.

35. A barrier layer according to any one of Claims 28 to 34 having a thickness of from about 0.05 to about 100 microns.

36. A barrier layer according to any one of Claims 28 to 34 having a thickness of from about 0.075 to about 50 microns.

37. A barrier layer according to any one of Claims 28 to 34 having a thickness of from about 0.1 to about 30 microns.

38. A barrier layer according to any one of Claims 28 to 37 comprising in order: a sub-layer of a polyolefin, a sub-layer of an ethylene vinyl alcohol copolymer and a further sub-layer of a polyolefin.

39 A method of applying a barrier layer comprising: forming a pre-polymer by combining an isocyanate solution with a polyol solution; applying the pre-polymer to a surface of the stopper; and allowing the pre-polymer to cure.

40 A method of applying a barrier layer to a stopper comprising applying reactive hot melt adhesive to one of a stopper and a partially formed barrier layer; allowing the hot melt adhesive to cool; and contacting the stopper and the barrier layer such that bonding occurs.

41 A method according to Claim 40 wherein the barrier layer having been applied to the stopper is held in tension and the stopper is pushed into a cup.